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MONTHLY REPORT

1 August 1956 - 31 August 1956

RESEARCH AND DEVELOPMENT BRANCH  
ENGINEERING DIVISION

RESEARCH AND DEVELOPMENT LABORATORY

1. PROJECTS AND ACTIVITIES

2001 - MECHANICAL LABORATORY PROJECTS

In addition to the effort expended in support of the numbered projects the Mechanical Laboratory completed 30 small chassis for SPD. Thirty cases for these chassis are 95% complete.

2003 - LABORATORY OVERHEAD PROJECTS

Two representatives of the Laboratory visited the [REDACTED] plant at Silver Spring, Md. to gather information pertinent to establishing limited plating facilities at the Laboratory. See attached Trip Report.

25X1A5a1

2004 - COMMERCIAL EQUIPMENT EVALUATION and  
2005 - FOREIGN EQUIPMENT EVALUATION

a. Miniature Morse Keying Device

The Miniature Morse Keyer is a small hand operated dual purpose device for perforating a tape and subsequently keying a CW transmitter. In its tape perforating function the unit cuts dual spaced holes in a paper tape. The larger holes represent dashes and the small holes represent dots. In the keying operation the tape is hand pulled over a set of spring loaded contacts which key the transmitter "on" in proportion to the diameter of the holes in the tape.

Mechanically, this keyer-perforator is well constructed and portable. The device functioned satisfactorily as a tape perforator and perfect tape was punched with it. Electrically, however, the erratic operation of the keying head contacts and lack of control over tape speed precludes the possibility of transmitting perfect copy.

It is recommended that a redesign of the device be initiated prior to operational use. Some additional mechanism should also be included to provide a means for driving the tape at a more constant speed.

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2502 - MULTICOUPLER INVESTIGATION

The report of the 6AH6 tube life study has been distributed. Current Laboratory commitments to this project are complete.

2506 - MODIFIED DISCONE ANTENNA

The thirty Modified Discone Antennas have been completed with exception of final checks. The antennas will be ready for delivery during the first part of the coming period.

2507 - TELEPHONE DIAL KEYERS

The telephone dials required by this project have been received. The project remains suspended pending O&T decision on the feasibility of modifying the units for dot-dash combinations.

2508 - PHOTO-ETCHED ANTENNAS

Work on this project was restarted on a part-time basis during the last period. In response to a request from SPD two configurations, one slot and one high gain, have been etched for the 2.6 - 3.2 kmc and the 8 - 10 kmc regions. Measurements made thus far indicate a gain of approximately 15 db for the high gain antenna. Tests will continue during the coming period.

2509 - ELECTRONIC KEYS (EK-1X)

Work on the keyer project was started during this period. Design of the vacuum tube version is being paralleled by an examination of the possibility of using printed circuit plug-in boards, magnetic memory cores, and transistors. A vacuum tube power supply and a prototype paddle key have been breadboarded.

2510 - MINIATURE AUDIO OSCILLATOR (E/IN-1X)

The relaxation oscillator using Zener diodes was unsuccessful because of a too shallow slope in the negative resistance characteristic of the diode.

Work continues on an LC tank beat frequency oscillator. The frequency stability has been improved somewhat by changing from germanium to silicon transistors; however, it has not been determined whether the circuit using silicon transistors will meet the stability requirement over the desired temperature range (0°C to 50°C).

In response to an SPD request, the original prototype (multivibrator) is being slightly reworked for use until the development of a more suitable circuit is complete.

2512 - TRANSISTORIZED RF CONVERTER

The first of two converter units designed to cover the 6 - 12 mc range is ready for packaging.

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2513 - [REDACTED]

The five additional sets of running light components have been completed. The operating notes and instructions, and a discussion of system characteristics, are in rough draft and will be ready for distribution in about one week.

2515 - TRANSMITTER ADAPTER (TA-1) (A-3 MODIFICATION)

Temporarily suspended to await completion of higher priority projects.

2517 - FIXED FREQUENCY REFERENCE OSCILLATOR (ELINT)

The prototype oscillator using a tuning fork has been delivered for evaluation. The oscillator planned for construction around a 1000 cycle/sec crystal has been temporarily suspended pending delivery of the crystal. Delivery of the crystal is expected early in the coming period.

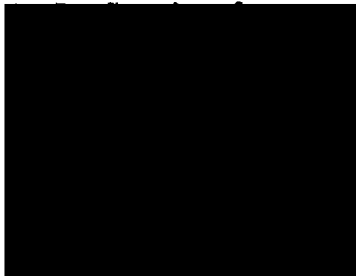
2518 - MODIFICATION OF MINIFON WIRE RECORDERS

The Laboratory will modify and repackage five MINIFON recorders for use with the demand receivers constructed and reported under Project 2513. The recorders are on hand and liaison discussions have been held with SPD. A project initiation form will be forwarded as soon as requirements are firm.

2. ADMINISTRATIVE

TDY

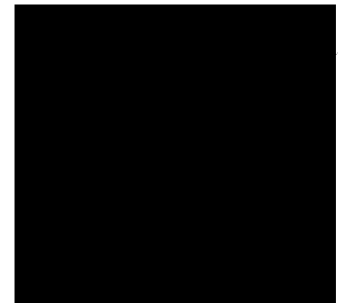
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26 July 1956

14 August 1956

21-23 August 1956



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PCS

Not applicable

EOD



14 August 1956

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RESIGNATIONS

Not applicable

TRANSFERS

Not applicable

OTHER

Not applicable

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Chief, Research & Development Laboratory

APPROVED:

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Chief, Research & Development Branch, OC-E

ATTACHMENTS:

29 August 1956, Trip and Progress Report, Plating  
Facilities for the Mechanical Laboratory of the

25X1A5a1

29 August 1956, ATP-3 - Investigating the Use of

29 August 1956, ATP-3 - Investigating the Use of  
Investment Castings